



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/747,985	12/30/2003	David B. Olson	59460US002	6610
32692	7590	01/29/2007	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			BERNSHTEYN, MICHAEL	
ART UNIT		PAPER NUMBER		
				1713
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	01/29/2007	PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/747,985	OLSON ET AL.
	Examiner Michael Bernshteyn	Art Unit 1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 02 January 2007.  
 2a) This action is FINAL.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 26 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 26 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 30 December 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. This Office Action follows a response filed on January 2, 2007. All the pending claims except claim 26 have been cancelled.
2. In view of the new ground(s) of rejection, the finality of previous Office Action is withdrawn. The indicated allowability of claim 26 is withdrawn in view of the newly discovered reference(s) to Martens (U. S. Patent 4,576,850). Rejections based on the newly cited reference(s) follow.
3. Claim 26 is active.

### ***Specification***

4. The amendment filed on September 26, 2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material, which is not supported by the original disclosure, is as follows: there is no limitation in the specification including the examples (page 13, line 25 through page 15, line 10) indicating that the polymerizable composition is solvent-free.

Applicant is required to cancel the new matter in the reply to this Office Action.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

5. Claim 26 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no any indication in the specification and in the claims that the polymerizable composition is solvent-free, which consequently raise doubt as to possession of the claimed invention at the time of filing.

***Claim Rejections - 35 USC § 103***

6. The text of this section of Title 35 U.S.C. not included in this action can be found in a prior Office Action.

7. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olson et al. (U.S. Patent 6,261,700) in view of Martens (U. S. Patent 4,576,850).

Olson discloses coatings; composite structures containing coatings, and compositions for preparing and methods of preparing coatings and composite structures, wherein the compositions comprise inorganic oxide particles and polymerizable brominated compounds, and coatings comprise inorganic oxide particles and a brominated polymer (abstract).

With regard to the limitations of instant claim 26, Olson discloses the compositions, which contain ingredients including inorganic oxide particles and a curable binder precursor, wherein the binder precursor includes a polymerizable brominated compound. Particularly preferred polymerizable brominated compounds

comprise polymerizable aromatic, brominated (meth)acrylate compounds having an aromatic portion, a brominated portion (which may or may not be the aromatic portion), and a (meth)acrylate moiety (col. 4, lines 53-63).

Olson discloses that the most preferable first monomer comprising a major portion of 2-propeonic acid, (1-methylethylidene)bis[(2,6,dibromo-4,1-phenylene)oxy(2-hydroxy-3,1-propanediyl)] ester as the reaction product of **tetrabromobisphenol A diglycidyl ether** and **(meth) acrylic acid** which is known under the trade designation 'RDX-51027" and used in the table 1, examples 1 and 3 (col.26, lines 18-55). This component is readable as component a) in the instant claim 1. Other examples of polymerizable brominated compounds that can be useful in the binder precursor include but are not limited to **tribromophenyl (meth)acrylate**, pentabromophenyl (meth)acrylate, tribromophenylethyl (meth)acrylate, bromomethyl styrene, and brominated bisphenol A (meth)acrylate compounds (col. 8, lines 28-33). Tribromophenyl (meth)acrylate is readable as component a) in the instant claim 26.

A multifunctional non-brominated compound can be any multifunctional non-brominated compound that can react with the other components of the binder precursor to produce a polymer. Preferred multifunctional non-brominated compounds comprise ester (meth)acrylate compounds such as difunctional (meth)acrylate esters of a polyhydric alcohol, and combinations thereof. Of these, trifunctional and tetrafunctional esters of (meth)acrylate esters of polyhydric alcohol can be especially preferred. Examples of suitable multifunctional ester (meth)acrylates include poly(meth)acrylic acid esters of polyhydric alcohols including, for example, **tri(meth)acrylic acid esters of**

**pentaerythritol**, etc. Particularly preferred multifunctional ester (meth)acrylic acids can comprise a mixture of di-, tri-, and tetra(meth)acrylate esters of **pentaerythritol** (col. 12, line 39 through col. 13, line 13). **Pentaerythritol tri(meth)acrylate** is readable as component b) in the instant claim 26.

Olson discloses that while amounts outside of the following ranges may be useful, preferred binder precursors can include from **about 20 to about 80 parts by weight** (pbw) polymerizable **brominated** compound, e.g., aromatic, brominated (meth)acrylate compound, which is within the claimed range (col. 13, lines 19-22).

Olson discloses that the binder precursor can also contain polymerizable **non-brominated** compound in useful amounts, e.g., from **about 20 to 80 pbw**, preferably about 50 to 70 pbw, based on 100 pbw binder precursor, which is within the claimed range (col. 13, lines 31-33).

It is noted that the amount of the weight ratio of the components A and B is a result effective variable, and therefore, it is within the skill of those skilled in the art to find the optimum value of a result effective variable, as per *In re Boesch and Slaney* 205 USPQ 215 (CCPA 1980). See also *Peterson*, 315 F.3d at 1330, 65 USPQ2d at 1382: "The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages."

Olson does not disclose that the polymerizable composition is solvent-free.

Williams discloses a method of producing a microstructure bearing article that includes the steps of molding the microstructure on the base, curing the resin that forms the microstructure, and heat treating the microstructure (abstract).

With regard to the limitations of instant claim 26, Martens discloses an article comprising a shaped, plastic layer or body comprising crosslinked polymer with hard and soft segments or moieties and having a microstructure-bearing surface is prepared by a process comprising filling a mold master, bearing or encoded with the microstructure to be replicated, with a fluid, castable, one-part, preferably **solvent-free**, **radiation addition-polymerizable**, crosslinkable, synthetic, organic oligomeric **composition** (abstract).

Both references are analogous art because they are from the same field of endeavor concerning new polymerizable compositions for optical articles.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to obtain Olson's polymerizable composition for optical articles as solvent-free as taught by Martens because use of solvents require a long time to evaporate, long cure cycles, curable materials which have a limited "pot" life, or result in replicated articles having limited toughness and dimensional stability and with severe shrinkage (US'850, col. 2, lines 4-8), and thus to arrive at the subject matter of instant claim 26.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Bernshteyn whose telephone number is 571-272-2411. The examiner can normally be reached on M-F 8-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael Bernshteyn  
Patent Examiner  
Art Unit 1713

MB  
01/24/2007

*Q. Wu*  
DAVID W. WU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700